

# c h a p t e r 1

## The Nature of Disasters

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### GOAL

The goal of this chapter is to introduce the reader to the concepts behind disasters, what they are, and how disaster response is organized in the United States.

### OBJECTIVES

At the completion of this chapter, the reader will:

1. Understand the concepts of emergency and disaster.
2. Describe the differences between a natural and man-made disaster.
3. Compare and contrast the different levels of disaster response, from local to national.

### Key Terms

- Emergency
- Disaster
- Disaster response
- Natural disasters
- Man-made disasters
- Levels of disaster response

### Introduction

The terms *disaster* and *emergency* are often used interchangeably. Before one can even begin to discuss disaster planning or preparedness, understanding the difference between a disaster and an emergency is important. According to the World Health Organization (WHO, 2005), an emergency is a situation where a sudden incident or event has occurred and normally used, local responses will suffice to care for the situation without calling in



## 2 CHAPTER 1: The Nature of Disasters

outside help. An emergency can be natural or man-made. Examples of emergencies would be a car accident or a water main breaking.

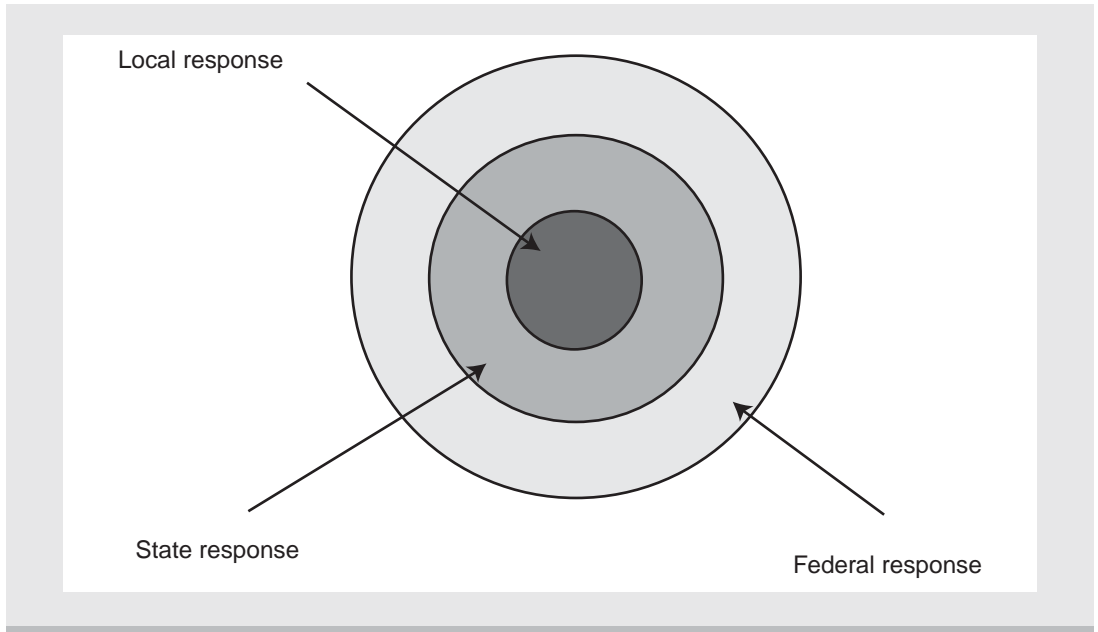
A disaster is any event that leads to a response beyond which the affected community can deal with locally. Disasters, like emergencies, can be man-made or natural. Disasters are a subset of emergencies and tax responding agencies beyond their capacity. Disasters for one community may not be more than emergencies for another community and degree of response can be like a spreading ring of concentric circles, influencing the outer rings less and less (WHO, 2005). Examples of disasters would include such things as the expected pandemic flu outbreak, earthquakes, technology destruction so great as to interrupt the economics of a country, or a war.

An example of how disaster response and declaration may be made can be seen in a train accident, where a train transporting dangerous chemicals derails in a small Midwestern town at 0224 on a Wednesday morning. The first to respond to this incident would be the town's local police and fire departments. As the seriousness of the situation grows and the town's mayor realizes that she does not have the manpower or equipment to deal with a chemical spill of this magnitude, the mayor decides to call in the county sheriff's department to help deal with the crowds forming as people are evicted from their homes and the local Red Cross is overwhelmed. While waiting for the railroad company to send help, the incident commander, mayor, and other local disaster response agencies discuss the situation and realize they have much more than an emergency on their hands; they have a disaster.

Because of the growing spill and dangers to her town, the mayor contacts the governor of her state. At this level, the local disaster is an emergency that the state government begins to assess and deploy help to the area. State departments of homeland security and public health, the state police, and other disaster response agencies in the state are activated. Not sure if this is an accident yet or a possible terrorist attack, the governor is advised that contact with the FBI, federal Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA), and other federal disaster agencies should be made and the governor okays the state's head of their homeland security to do so.

What once was a local emergency has now become a local disaster, as local responding agencies are overwhelmed, hospitals are filled with citizens exposed to dangerous and unknown chemicals or just afraid they were exposed and in a panic, and the chemical spill seeps into the ground, contaminating the local aquifer. As support comes in from state agencies, the governor declares the whole region of the state a disaster area and makes a request of the president of the United States to send federal assistance. The governor tells the president that the state does not have the supplies to deal with such a major chemical spill or the displaced populations and that healthcare and emergency responders are overwhelmed. In the space of a few hours, an event that was an emergency is now a local and state disaster, but still not a federal emergency (Figure 1-1).





**Figure 1-1** As each level of response spreads out from an incident, the degree of severity decreases, going from a local disaster to a federal emergency.

In this chapter, the nature of a disaster and who responds to it will be covered. Different types of disasters will be addressed in a general overview and gone into more depth in future chapters. As each level of response spreads out from an incident, the degree of severity decreases, going from a local disaster to a possible federal emergency or disaster.

## Types of Disasters

There are basically two different types of disasters: natural and man-made. Natural disasters are such things as earthquakes, tsunamis, pandemic flu outbreaks, and tornados (see Figure 1-2). Man-made disasters include anything that a human being has done to cause a disaster, such as acts of bioterrorism, hijackings, and war. The type of response does vary in specifics, but, generally, it is the same for all disasters: assess, contain, respond, and recover.

### *Natural Disasters*

Natural disasters often strike without warning, though most areas know what is “normal” for their areas and prepare for such occurrences. Assessing is done by reviewing the history of the region, looking at what weather and other disasters have occurred in the past. For example, at the southern tip of Illinois through



#### 4 CHAPTER 1: The Nature of Disasters



**Figure 1-2** Ruins of houses in Aceh, Indonesia after the Boxing Day Tsunami caused by the 2004 Indian Ocean Earthquake. *Source:* ©A. S. Zain/Shutterstock, Inc.

Missouri and Arkansas is a fault line called the New Madrid Fault. The last time this fault moved and produced a major earthquake was in 1811–1812. The disaster covered more than 50,000 square miles, almost 10 times the size of the San Francisco earthquake in 1906. Because the potential for another major earthquake exists and the fault is due for one, almost all towns along the fault and through much of Illinois and Missouri are prepared to deal with such a natural disaster.

Some natural disasters occur with more warning than an earthquake or tornadoes. As the United States saw in 2005 with Hurricane Katrina, there is often enough warning to prepare for the disaster and to evacuate citizens when necessary. Wildfires are another example of natural disasters, though some are man-made, that provide time for people to evacuate or establish firefighting responses to the disaster.



### *Man-made Disasters*

There are some man-made disasters that occur or can occur with some warning, such as knowing that a dam is weak and, without proper mitigation, it will break, releasing a flood. However, most of the serious man-made disasters are the result of unexpected accidents (e.g., an oil tanker running aground or a power plant blowing up) or deliberate acts of terrorism. There are also epidemics and pandemics that occur with some regularity and, while one may not consider these man-made, many are the result of people living with livestock, as in influenza, or living in crowded conditions, which helps spread tuberculosis.

In assessing the potential for these disasters, first responders, public health officials, and other healthcare agencies survey their communities for the potential for man-made disasters. Many people believe that their area of a country is unimportant and a terrorist attack would occur somewhere more “important.” They believe that a city such as Atlanta would be more likely to be attacked than a city such as Ocilla, Georgia. This is not the case, though, for most major security agencies in the United States know that terrorists are looking at the psychological response from an attack as much as from destroying major landmarks or large numbers of people. Ocilla, being an average small town, would be a perfect choice to shock and numb people reading about such a “senseless” attack.

## Levels of Disaster Response

It is important for every locale to prepare for potential disasters, natural or man-made. Part of preparing is understanding who responds when and how. There was much criticism leveled at responders to Hurricane Katrina, and many people wondered why FEMA was not in Louisiana and Mississippi *before* the hurricane struck. The reason is that there are different levels of response for a disaster, and no level responds before requested to do so by the lower level below it.

In the scenario presented above, a small town was overwhelmed by a train accident with a resulting chemical spill. The mayor utilized her local resources, which included the police and fire departments, hospitals, ambulance services, and the local American Red Cross. The town also had a Community Emergency Response Team (CERT), a group of local citizens who volunteer in times of need. After a short period of time, the mayor realized that she did not have the means to respond effectively, and she contacted the county sheriff’s department. When the county sheriff found his agency overwhelmed, the governor was called and state response was requested.

Because the incident outgrew the state’s ability to handle the incident, the governor called the president of the United States and asked for a federal response. What started as a local emergency eventually became a state disaster, and a chain of first responders was activated.



## 6 CHAPTER 1: The Nature of Disasters

This chain of response can even go to a level beyond the ability of a nation to handle, and international disaster relief can be requested. At this level, such agencies as the International Red Cross and the United Nations will respond. In Table 1-1, the various levels of response and who has the power to call for help from that agency is outlined.

TABLE 1-1 LEVELS OF RESPONSE

Level of Response	Agencies Responding	How Requested
Local	Police	Called by local citizens
	Fire	Called by local citizens
	Hospitals	Notified by local EMS
	Ambulance/emergency medical service (EMS)	Called by local citizens or local EMS
	Local public health department (PHD)	Called by local citizens, mayor, or local EMS
	Community Emergency Response Team (CERT)	Called by mayor or mayor's representative
	Medical Reserve Corps (MRC)	Called by mayor or mayor's representative
	Volunteers in Police Service (VIPS)	Called by mayor or mayor's representative
	Red Cross	Called by local EMS or citizens
County	County law enforcement	Called by local citizens, county officials, or mayor
	County EMS	Called by local citizens, county officials, or mayor
	County emergency management agency (EMA)	Called by county officials
	County PHD	Called by local citizens, mayor, or local EMS
State	State EMA	Called by governor
	State EMS	Called by governor
	State Red Cross	Called by local Red Cross
	State PHD	Called by local or county PHD

(continued)



TABLE 1-1 LEVELS OF RESPONSE (Continued)

Level of Response	Agencies Responding	How Requested
Federal	State law enforcement	Called by governor
	State homeland security	Called by governor
	State disaster volunteers	Called by governor
	National Guard	Called by governor
	Department of Homeland Security	Called by president
	FBI	Called by local citizen, mayor, governor, or president
	CIA	Called by local citizen, mayor, governor, or president
International	American Red Cross	Called by state Red Cross
	FEMA	Called by local EMA, governor, or president
	United States Public Health Service	Called by state PHD
	United Nations	Called by leader of requesting country
	World Health Organization	Called by leader of requesting country
	International Red Cross	Called by leader of requesting country or American Red Cross

Timing is also a factor in responding to a disaster. Most agencies do not wait to be called to a disaster, but call and ask if help is needed or respond when they hear about the disaster. An excellent example of this occurred when the World Trade Centers, the Pentagon, and the plane crash in Pennsylvania took place on September 11, 2001. Many leaders of foreign countries called our president to ask if they could help us respond to the disasters. We were able to deal with the disasters without international help, but it was comforting to know that, should our resources be overwhelmed, we did have help available from other countries.

In the case of federal agencies, FEMA is an agency that does not automatically respond to a disaster. The same is true of Homeland Security and even the Strategic National Stockpile, which is a cache of medications and other disaster medical equipment kept in hidden and secure areas that can be called upon if local



## 8 CHAPTER 1: The Nature of Disasters

resources are overwhelmed. These agencies and resources on the federal level are generally only available after the first 48 hours of a disaster and take 12 hours to be mobilized.

### Conclusion

In this chapter, a broad overview of what a disaster is and what agencies respond was provided. We learned that every emergency is not a disaster, but every disaster is an emergency. First responders are called out in levels, from the local to the county, state, federal, and international levels. In Chapter 2, a closer look at volunteerism in a disaster offers a first look at how people respond to disaster, because it is often local volunteers who are on the scene of a disaster along with the first responders from the local community.

### Reference

World Health Organization. (2005). *List of definitions*. Retrieved July 6, 2007, from <http://www.who.int/hac/techguidance/training/induction/definitions%20list.pdf>